LRFD Bridge Design Manual Update ~ July 2014

Article	LRFD	
New Chapter Numbers	<u>New Chapter Numbering</u>	<u>Old Chapter Numbering</u>
	Preface	Preface
	1 Introduction	1 Introduction
	2 General Design	2 General Design
	3 Preliminary Design	3 Preliminary Design
	4 *Reserved*	4 *Reserved*
	5 Bridge Superstructure Design	5 Bridge Superstructure Design
	6 Bridge Substructure Design	6 Bridge Substructure Design
	7 Culverts	7 Falsework Design
	8 Accelerated Bridge Constr.	8 Culverts
	9 *Reserved*	9 Bridge/Culv Insp/Rate/Repair
	10 Special Structures	10 Special Structures
	11 Falsework Design	11 Cadd Notes
	12 Bridge/Culvert Insp/Rating/Repair	
	13 Cadd Notes	
Entire BDM Updated	All BDM chapters have been updated. All update markups prior to July 2014 have been accepted and the markups have been removed. All sections will be designated with a July 2014 date. Markups for the July 2014 release are included. Markups due to chapter renumbering are not shown.	
Chapter 8 New	Draft Accelerated Bridge Construction chapter has been incorporated into the BDM as Chapter 8 and is no longer a draft.	
Chapter 9 Draft New	Draft Bridge Aesthetics chapter will be posted on the OBS website. This chapter is not yet included in the BDM.	
Preface	Miscellaneous updates	
C2.6.1, C2.7.1.1, C2.7.1.2, C2.7.2.1, C3.2.4.4, C3.2.6.4, C7.2.4.4.4, C7.2.4.5.1, C7.2.4.5.3, C7.2.4.10, and C7.4.4.10.1	Removed references to MM No. 29, 96, 122, 152, 169, 191, 201, 219, 222, and 225. Over time all references to Methods Memos will be removed from the BDM and website. MM No. 201 which addresses overpass projects for railroads was copied into C3.2.4.4.	
2.13	Updated design team tasks for plan turn-in.	
Preliminary Design Culvert Guidelines	Extensive updates to culvert hydrology section and additional updates to other sections.	
3.2.3.1	Updated policy for horizontal clearance requirements with respect to preferred and acceptable clear zones.	
3.2.5	Added requirement that pedestrian and shared use path culverts must include fall protection around the headwall.	
3.2.8	Updated bridge costs based on April 2014 data and included a percentage cost for aesthetics.	
C3.2.9	Updated list of mandatory items for situation plan layout sheets.	
5.2.1.1, 5.2.4.1.1.2, 5.2.4.1.2, 5.4.2.4.2, 5.5.2.4.2, 5.6.2.4.1.2,	Barrier rail to bridge deck/wing rebar for interstate and primary bridges will be stainless steel beginning with January 2015 letting.	

5.6.2.4.2, 5.8.1.1.1, 5.8.1.2.1.1, 5.8.5.1.1, 6.5.1.1.2, 6.5.4.1.2, 6.5.4.2.2, and 6.5.4.3.2	
5.5.2.3.3 and C5.5.2.3.3	Updated method for determining $ADTT_{SL}$ for fatigue.
5.5.2.2.6	Applicable construction loading for steel girders was clarified.
5.5.2.4.4 New	Added an article in the steel girder chapter addressing fracture critical members.
6.2.6.1, C6.2.4.3, C6.2.4.6, 6.6.4.1.3.1, C6.6.4.1.3.1, and "LRFD Pile Design Examples ~ 2013"	Added description of Structural Resistance Level 4 (SRL-4) for Steel H-piles and updated other SRLs.
6.3.4	1.) Added reasons for use of 3.5 ksi for 28 day concrete strength of drilled shafts rather than 4.0 ksi which is common for nearly all other CIP bridge components. 2.) Updated requirements for determining downdrag load on drilled shafts.
6.5.4.3.1	Figure 6.5.4.3.1-1 was updated to show wing armoring and berm grading. (The figure markup is not shown.) An additional statement was added to clarify that wing lengths are typically based on a 1 to 2.5 slope even if the berm embankment slope is flatter.
6.6.2.2	Clarified the use of the live load shear increase for skewed bridges for pier cap overhang design when only one girder is on the overhang.
6.6.2.6	Clarification regarding pier collision protection.
6.6.4.1.1 and C6.6.4.1.1.1	Changed preferred pier cap sectional shear design method to the Simplified Procedure. Included a comparison of shear design methods in the commentary.
7.2.4.9.1	Addressed exterior wall transitions for culvert extensions.
13.2.2	Added E65/M65 to cover required shop drawing submittals.
13.8.2	1.) Pier pile driving notes E718 and E719 updated to match abutment pile driving notes E818 and E819. 2.) Added E750/M750 for situations involving downdrag on drilled shafts.